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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,480	01/15/2002	Jonathan Cheah	004939.P023	3685

7590 03/31/2003

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EXAMINER

CHOE, HENRY

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 03/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/053,480

Applicant(s)

Cheah et al.

Examiner

Henry Choe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jan 15, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10, 12-15, and 18-21 is/are rejected.
- 7) ☒ Claim(s) 6-9, 11, 16, and 17 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Jun 6, 2002 is/are a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4 6) ☐ Other:

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DETAILED ACTION

Drawings

1. Figures 1A, 1D and 1E should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 10 is objected to because of the following informalities: in line 1 of claim 10, should "bias" be --bias circuit--? Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

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4. Claims 1, 5, 10, 12, 15 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Conta et al (Fig. 8).

Regarding claims 1 and 19, Conta et al (Figs. 2, 5, 8) discloses a phase locked loop circuit comprising a phase frequency detector (803; see Fig. 2 for the internal structure of the PFD), and a charge pump (809; see Fig. 5 for the internal structure of the charge pump) without a feedback circuit which is coupled in series with the PFD (803).

Regarding claim 5, Conta et al (Figs. 2, 5, 8) discloses a phase locked loop circuit comprising a charge pump circuit (809; see Fig. 5 for the internal structure of the charge pump) which includes an upper current branch (505) which is configured to generate a positive current pulse and wherein the upper current branch inherently includes a plurality of PMOS transistors which is well known in the art, a lower current branch (513) which is configured to generate a negative current pulse and wherein the lower current branch inherently includes a plurality of NMOS transistors which is well known in the art, and a bias circuit (521 and 523 in Fig. 5) which is coupled to the upper (505) and lower (513) current branches with no intervening feedback circuit.

Regarding claims 10 and 15, the bias circuit (521 and 523 in Fig. 5) includes a positive current source (521) which is connected to the upper current branch (505) and a negative current source (523) which is connected to the lower current branch (513).

Regarding claim 12, Conta et al (Fig. 2) discloses a PFD comprising a first edge-triggered asynchronous-reset TSPC D flip flop (225), a second TSPC DFF (227), and an OR gate (213).

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Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-4, 13, 14, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conta et al (Figs. 2, 5, 8).

Conta et al (Figs. 2, 5, 8) discloses all the limitations in the claims except for that the first and second signals being up to approximately 2 GHZ, the very narrow voltage pulses are as small as 200ps, and the clock to Q and Reset to Q delays of less than 100ps. It would have been obvious in the absence of unexpected results as a mere matter of design choice to choose the specific frequency value or range to obtain the desired frequency capacity based on the desired use since this is a result effective variable.

Allowable Subject Matter

7. Claims 6-9, 11, 16 and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Patent numbers (6,433,596; 6,346,861; 6,320,470) are the phase locked loop circuits.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry Choe whose telephone number is (703) 305-0576. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bob Pascal, can be reached on (703) 308-4909.



Name: Henry Choe

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